

(19) World Intellectual Property
Organization
International Bureau



(43) International Publication Date
6 May 2005 (06.05.2005)

PCT

(10) International Publication Number
WO 2005/040756 A2

- (51) International Patent Classification⁷: **G01N**
- (21) International Application Number:
PCT/US2004/035295
- (22) International Filing Date: 22 October 2004 (22.10.2004)
- (25) Filing Language: English
- (26) Publication Language: English
- (30) Priority Data:
60/513,411 22 October 2003 (22.10.2003) US
- (71) Applicant (for all designated States except US): **THE REGENTS OF THE UNIVERSITY OF CALIFORNIA** [US/US]; 1111 Franklin Street, Twelfth Floor, Oakland, CA 94607-5200 (US).
- (72) Inventors; and
- (75) Inventors/Applicants (for US only): **GUO, Bing** [CN/US]; 776 Laugenour Drive, Woodland, CA 95776 (US). **KENNEDY, Ian, M.** [US/US]; 2754 Eel Place, Davis, CA 95616 (US). **DOSEV, Dosl** [BG/US]; 1805 Anderson Road #53, Davis, CA 95616 (US). **MELNIKOV, Darina** [US/US]; 5929 Shirley Avenue, Carmichael, CA 95608 (US). **NICHKOVA, Mikaela** [BG/US]; 1050 Lake Blvd., Ap.32, Davis, CA 95616 (US).
- (74) Agents: **SHUSTER, Michael, J. et al.**; Fenwick & West LLP, Silicon Valley Center, 801 California Street, Mountain View, CA 94041 (US).
- (81) Designated States (unless otherwise indicated, for every kind of national protection available): AE, AG, AL, AM, AT, AU, AZ, BA, BB, BG, BR, BW, BY, BZ, CA, CH, CN, CO, CR, CU, CZ, DE, DK, DM, DZ, EC, EE, EG, ES, FI, GB, GD, GE, GH, GM, HR, HU, ID, IL, IN, IS, JP, KE, KG, KP, KR, KZ, LC, LK, LR, LS, LT, LU, LV, MA, MD, MG, MK, MN, MW, MX, MZ, NA, NI, NO, NZ, OM, PG, PH, PL, PT, RO, RU, SC, SD, SE, SG, SK, SL, SY, TJ, TM, TN, TR, TT, TZ, UA, UG, US, UZ, VC, VN, YU, ZA, ZM, ZW.
- (84) Designated States (unless otherwise indicated, for every kind of regional protection available): ARIPO (BW, GH, GM, KE, LS, MW, MZ, NA, SD, SL, SZ, TZ, UG, ZM, ZW), Eurasian (AM, AZ, BY, KG, KZ, MD, RU, TJ, TM), European (AT, BE, BG, CH, CY, CZ, DE, DK, EE, ES, FI, FR, GB, GR, HU, IE, IT, LU, MC, NL, PL, PT, RO, SE, SI, SK, TR), OAPI (BF, BJ, CF, CG, CI, CM, GA, GN, GQ, GW, ML, MR, NE, SN, TD, TG).

Published:

— without international search report and to be republished upon receipt of that report

For two-letter codes and other abbreviations, refer to the "Guidance Notes on Codes and Abbreviations" appearing at the beginning of each regular issue of the PCT Gazette.

(54) Title: METHODS FOR PREPARING AND FUNCTIONALIZING NANOPARTICLES

(57) Abstract: Fluorescent or phosphorescent nanoparticles, fluorescent or phosphorescent magnetic nanoparticles, combustion-based methods for their synthesis, and methods to functionalize them are described. The methods provided by the invention are simplified, efficient and cost effective as compared to prior art methods. The resulting fluorescent or phosphorescent nanoparticles have reduced tendency toward aggregation, and diminished need for postmanufacturing processing steps. The particles may be manufactured with combinations of lanthanides so as to absorb and emit light over a variety of wavelengths.

WO 2005/040756 A2